

AMENDMENTS TO THE CLAIMS

1. (Currently amended) A method of fabricating a steel part, the method comprising the steps of:

- preparing and casting a steel having the following composition in percentage by weight: $0.06\% \leq C \leq 0.25\%$; $0.5\% \leq Mn \leq 2\%$; $traces \leq Si \leq 3\%$; $traces \leq Ni \leq 4.5\%$; $traces \leq Al \leq 3\%$; $traces \leq Cr \leq 1.2\%$; $traces \leq Mo \leq 0.30\%$; $traces \leq V \leq 2\%$; $traces \leq Cu \leq 3.5\%$; and $0.005\% \leq S \leq 0.2\%$;

- wherein the steel contains 5 ppm to 50 ppm of B, and 0.005% to 0.04% of Ti, where the Ti content is equal to at least 3.5 times the N content of the steel;

- wherein the steel further contains at least one of the following elements: Ca up to 0.007%; Te up to 0.03%; Se up to 0.05%; Bi up to 0.05%; and Pb up to 0.1%, and

- wherein the steel satisfies at least one of the following conditions:

- * $0.5\% \leq Cu \leq 3.5\%$;

- * $0.5\% \leq V \leq 2\%$;

- * $2\% \leq Ni \leq 4.5\%$ and $1\% \leq Al \leq 2\%$;

the remainder being iron and impurities resulting from preparation;

- hot deforming the cast steel at least once at a temperature in the range 1100°C to 1300°C in order to obtain a blank of the part;

- controlled cooling of the blank for the part in still air or forced air to obtain a bainite microstructure; and

- heating the steel to perform precipitation annealing before or after machining the part from said blank,

- wherein the hot deformation is forging;

- wherein when the steel comprises 0.5% to 3.5% of Cu, the precipitation annealing is performed in the range of 425°C to 500°C for 1 h to 10 h, when steel comprises 0.5% to 2% of V, the precipitation annealing is performed in the range of 500°C to 600°C for more than 1 h, and when the steel comprises 2% to 4.5% of Ni and 1% to 2% of Al, the precipitation annealing is performed in the range of 500°C to 550°C for more than 1 h; and

- wherein the controlled cooling of the blank is performed at a rate less than or equal to 3°C/s in the range of 600°C to 300°C,

- wherein the part has a tensile strength R_m of 1000 MPa to 1300 MPa, and a yield strength R_e of greater than or equal to 900 MPa, and

- wherein the bainite microstructure obtained after controlled cooling of the blank is 100% bainite.

2-4. (Cancelled)

5. (Previously presented) The method according to claim 1, wherein the steel further contains 0.005% to 0.06% of Nb.

6-7. (Cancelled)

8. (Previously presented) The method according to claim 1, wherein the C content of the steel lies in the range 0.06% to 0.20%.

9. (Previously presented) The method according to claim 8, wherein Mn content of the steel lies in the range 0.5% to 1.5%, and wherein the Cr content lies in the range 0.3% to 1.2%.

10. (Previously presented) The method according to claim 8, wherein the Ni content of the steel lies in the range traces to 1%.

11. (Previously presented) The method according to claim 8, wherein the Ni content of the steel lies in the range 2% to 4.5%, and wherein the Al content lies in the range 1% to 2%.

12-18. (Cancelled)

19. (Original) A steel part, obtained by the method according to claim 1.

20-21. (Cancelled)

22. (New) The method according to claim 1, wherein the conditions regarding V, Ni and Al are not satisfied, and therefore the steel comprises 0.5% to 3.5% Cu, and the precipitation annealing is performed in the range of 425°C to 500°C for 1 h to 10 h.

23. (New) The method according to claim 1, wherein the conditions regarding Cu, Ni and Al are not satisfied, and therefore the steel comprises 0.5% to 2% V, and the precipitation annealing is performed in the range of 500°C to 600°C for more than 1 hr.

24. (New) The method according to claim 1, wherein the conditions regarding Cu and V are not satisfied, and therefore the steel comprises 2% to 4.5% Ni and 1% to 2% Al, and the precipitation annealing is performed in the range of 500°C to 550°C for more than 1 hr.